

C L A I M S

We Claim:

- sub c' → 1. A system for transmitting data representing a video image, comprising:
- 2 a. a medical test device for generating the video image;
  - 3 b. a transmitter coupled to the medical test device for receiving and selectively
  - 4 distributing data representing the video image; and
  - 5 c. one or more remote receivers for communicating with the transmitter and
  - 6 configured to receive the data representing the video image from the
  - 7 transmitter.
- 1 2. The system according to claim 1 wherein the transmitter further comprises a
- 2 compressor configured for compressing the data representing the video image, thereby
- 3 forming a compressed stream of data.
- 1 3. The system according to claim 2 wherein the one or more receivers further comprise a
- 2 decompressor configured for returning the compressed stream of data into an uncompressed
- 3 state.
- 1 4. The system according to claim 1 further comprising a recorder device coupled to the
- 2 medical test device and configured for storing the data representing the video image generated
- 3 by the medical test device.
- 1 5. The system according to claim 1 wherein the medical test device is one of an
- 2 ultrasound, a sonogram, an echocardiogram, and an angioplastigram.

1 6. The system according to claim 1 further comprising a network coupled between the  
2 transmitter and the one or more receivers for transporting the data representing the video  
3 image.

1 7. The system according to claim 6 wherein the network is an Internet Protocol network.

1 8. A system for transmitting a compressed video image, the system comprising a  
2 transmitter for receiving an uncompressed stream of data representing a video image having a  
3 plurality of uncompressed pixels and including a compressor for generating a compressed  
4 stream of data from the uncompressed stream of data, wherein the compressor comprises:

- 5 a. a line number generator for selectively forming a line number data structure  
6 representing a current one of the plurality of uncompressed pixels; and  
7 b. a repeat generator for selectively forming a repeat data structure representing  
8 one or more consecutive uncompressed pixels having a same line number,

9 wherein the compressed stream of data is formed from a combination of line number data  
10 structures and repeat data structures.

1 9. The system according to claim 8 further comprising one or more remote receivers  
2 coupled to the transmitter and configured to selectively receive the compressed stream of data  
3 from the transmitter.

1 10. The system according to claim 9 wherein the one or more remote receivers further  
2 comprise a decompression device for receiving the compressed stream of data and forming a  
3 plurality of decompressed pixels each representing one of the plurality of uncompressed  
4 pixels.

1 11. The system according to claim 9 further comprising a network coupled between the  
2 transmitter and the one or more receivers.

1 12. The system according to claim 11 wherein the network is an Internet Protocol network.

1 13. The system according to claim 8 further comprising a source device configured for  
2 generating the uncompressed stream of data representing the video image.

1 14. The system according to claim 13 further comprising a recorder device coupled to the  
2 source device and configured for storing the uncompressed stream of data representing the  
3 video image.

1 15. The system according to claim 13 wherein the source device is a medical test device.

1 16. The system according to claim 15 wherein the medical test device is one of an  
2 ultrasound, a sonogram, an echocardiogram, and an angioplastigram.

1 17. A system for transmitting a compressed video image, the system comprising:  
2 a. a source device for generating an uncompressed video image;  
3 b. a transmitter coupled to the source device and having an encoder device for  
4 compressing the uncompressed video image thereby forming a compressed data  
5 stream including one or more line number data structures and one or more  
6 repeat data structures representative of the uncompressed video image; and  
7 c. a remote receiver having a decoder device for receiving the compressed data  
8 stream and decompressing the compressed data stream thereby forming a  
9 decompressed data stream which is representative of the uncompressed video  
10 image.

1 18. The system according to claim 17 further comprising a recorder device coupled to the  
2 source device for storing the uncompressed video image.

1 19. The system according to claim 17 wherein the source device is a medical test device.

1 20. The system according to claim 19 wherein the medical test device is one of an  
2 ultrasound, a sonogram, an echocardiogram, and an angioplastigram.

1 21. The system according to claim 17 further comprising a network coupled between the  
2 transmitter and the receiver.

1 22. The system according to claim 21 wherein the network is an Internet Protocol network.

1 23. A system for allowing a user to remotely control a medical device, the system  
2 comprising:

- 3 a. a medical device for generating a plurality of video images;  
4 b. a transmitter coupled to the medical device for selectively distributing the  
5 plurality of video images; and  
6 c. a remote receiver coupled to the transmitter for selectively receiving the  
7 plurality of video images and allowing the user to remotely control the medical  
8 device through the receiver.

1 24. The system according to claim 23 wherein the medical device is one of an ultrasound,  
2 a sonogram, an echocardiogram, and an angioplastigram.

1 25. The system according to claim 23 wherein the remote receiver is coupled to the  
2 transmitter through a network.

1 26. The system according to claim 25 wherein the network is an Internet Protocol network.

1 27. The system according to claim 23 wherein the user remotely controls parameters of the  
2 plurality of video images including frame rate and frame size.

1 28. A method of compressing a stream of data representing a stream of pixels, each pixel  
2 having a corresponding illumination intensity value, the method comprising the steps of:

- 3 a. matching the illumination intensity value representing a pixel with a current  
4 line number;  
5 b. determining if the current line number matches a previous line number of an  
6 immediately prior pixel;  
7 c. incrementing a repeat counter if the current line number does match the  
8 previous line number;  
9 d. encoding a repeat data structure with the repeat counter, if the current line  
10 number does not match the previous line number and the repeat counter has a  
11 value greater than zero; and  
12 e. encoding a line number data structure with the current line number if the  
13 current line number does not match the previous line number;

14 wherein a compressed stream of data is formed from combinations of the line number data  
15 structure and the repeat data structure.

1 29. The method according to claim 28 further comprising the step of resetting the repeat  
2 counter to zero after the repeat data structure is encoded.

1 30. The method according to claim 28 wherein the repeat data structure and the line  
2 number data structure include an identification bit, wherein when the identification bit is in a  
3 first state, a repeat data structure is encoded and when the identification bit is in a second  
4 state, a line number data structure is encoded.

1 31. The method according to claim 30 further comprising the steps of:  
2 a. receiving the compressed stream of data, one data structure at a time;  
3 b. reading the identification bit within the data structure to determine if the data  
4 structure is a line number data structure or a repeat data structure;  
5 c. generating a representative average illumination intensity value corresponding  
6 to the line number if the data structure is a line number data structure; and  
7 d. generating a number of representative average illumination intensity values  
8 corresponding to the line number of a last received line number data structure  
9 if the data structure is a repeat data structure, wherein the number is equal to  
10 the repeat counter within the repeat data structure.

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